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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO.       |
|---|-------------|----------------------|---------------------------|------------------------|
| 10/622,042  | 07/17/2003  | Bo Su Chen           | 15436.441.7               | 2261                   |
| 22913 7590 07/30/2007<br>WORKMAN NYDEGGER<br>(F/K/A WORKMAN NYDEGGER & SEELEY)<br>60 EAST SOUTH TEMPLE<br>1000 EAGLE GATE TOWER<br>SALT LAKE CITY, UT 84111 |             |                      | EXAMINER<br>ROJAS, OMAR R |                        |
|   |             |                      | ART UNIT<br>2874          | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>07/30/2007   | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/622,042

Applicant(s)

CHEN ET AL.

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> .                  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 5, 2007 has been entered.

### *Response to Arguments*

2. Applicant's arguments filed July 5, 2007 have been fully considered but they are not persuasive.

With respect to claims 1-12, a particular coupling efficiency is inherently achieved by the device disclosed in Liu (US 6,909,554 B2) because the distance between the fore optic **150** and the microlens **108** of Liu is the same as the distance specified by independent claim 1.

With respect to claims 13-16 and 18-24, applicant(s) arguments are not persuasive because none of the argued limitations appear in claims 13-16 and 18-24.

With respect to claims 25-26, a particular coupling efficiency is inherently achieved by Liu's device because the thickness of Liu's posts **112** and the height and radius of Liu's lens **108** are the same as the thickness, height, and radius specified by claims 25-26.

With respect to claims 27-36, a particular coupling efficiency is inherently achieved by Liu's device because the distance between a second side of fore optic **150** and the optoelectronic element **153** of Liu is the same as the distance specified by independent claim 27.

Therefore, the previous rejection(s) of claims 1-16 and 18-36 have been maintained and repeated below.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1-16 and 18-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. US 6,909,554 B2 to Liu et al. ("Liu"). The Liu patent was made of record in a previous Office action**

Applicant has provided evidence in this file showing that the invention was owned by, or subject to an obligation of assignment to, the same entity as the Liu patent at the time this invention was made, or was subject to a joint research agreement at the time this invention was made. However, the Liu patent additionally qualifies as prior art under another subsection of 35 U.S.C. 102, and therefore, is not disqualified as prior art under 35 U.S.C. 103(c).

Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the invention of this application, and is therefore, not the invention "by another," or by antedating the applied art under 37 CFR 1.131.

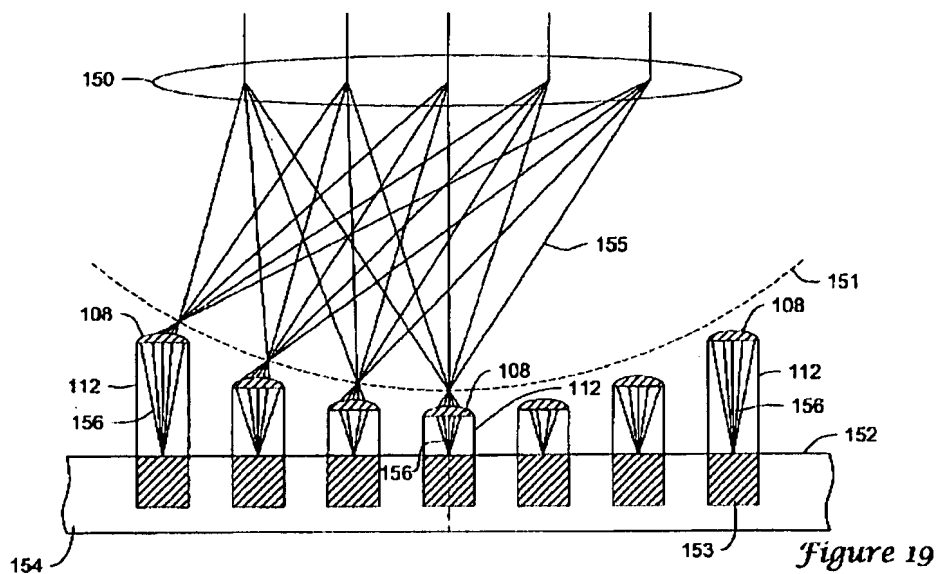
*In re* claims 1, 13, and 27, Liu discloses an optical coupling system (e.g., Figures 19-20) comprising:

a substrate **154** having a plurality of optoelectronic elements **153** formed on said substrate;

a plurality of posts **112** formed over the plurality of optoelectronic elements **153** on said substrate wherein each post has a height of between about 30 microns and about 250 microns (see Fig. 11a; col. 12, lines 24-34; and col. 13, lines 8-10);

a plurality of microlenses **108** with each lens **108** formed on a first end of said posts **112**, wherein the microlenses have a diameter of between 20 and 60 microns (col. 13, lines 8-10);

a fore optic/window/substrate **150** having a first side proximate to said plurality of microlenses and having a second side. A particular coupling efficiency is inherently achieved in Liu because the distance between fore optic **150** and microlens **108** is the same as the distance specified by claim 1 and the distance between the second side of fore optic **150** and the optoelectronic component **153** is the same as the distance specified by claim 27. Furthermore, a particular coupling efficiency is also achieved by Liu because the thickness of posts **112** and the height and radius of lens **108** is the same as the thickness, height, and radius specified by claim 25. Figure 19 of Liu is reproduced below.



In re claim 2, the particular limitations are shown in Figure 19 of Liu.

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*In re* claims 3, 8, 14, 15, 18, 19, 29, 30, and 32-34, the particular limitations are disclosed by Liu at column 7, lines 59-62 and column 15, lines 7-9.

*In re* claims 4, 16, 31, and 35, the particular limitations are disclosed by Liu at column 8, lines 1-4, and column 13, lines 33-65.

*In re* claim 9, the particular limitations are disclosed by Liu in the paragraph bridging column 13 to column 14.

*In re* claims 10-12, 22-24, and 28, the particular limitations are disclosed by Liu at column 8, lines 12-28 and column 13, lines 5-32.

Thus, Liu only differs from claims 1-4, 8-16, 18, 19, 22-24, and 27-35, in that Liu does not mention that the fore optic/window/substrate **150** is made of glass. Liu does mention that the fore optic **150** may comprise a lens (column 1, lines 63-65). Glass lenses are well-known in the art. It would have been obviously expedient to use glass in the fore optic **150** of Liu in order to provide an operable lens. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 1-4, 8-16, 18, 19, 22-24, and 27-35 in view of Liu.

*In re* claims 5, 18, and 36, the previous remarks concerning Liu are incorporated herein. Liu further differs from claims 5, 18, and 36 in that Liu does not specifically mention using single

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mode optical fiber. Single mode optical fibers are well known in the art and would be considered a conventional type of optical fiber. Since Liu mentions using an optical fiber, it would have been obviously expedient to use single mode fiber in order to provide an operable optical fiber. Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 5, 18, and 36 in view of Liu.

*In re* claims 6, 7, 20, and 21, the previous remarks concerning Liu are incorporated herein. Liu further differs from claims 6, 7, 20, and 21, in that Liu does not specifically mention whether the optical fiber is placed at a distance or in contact with a surface of the fore optic/window **150**.

However, these are the only two possible alternative for locating the optical with respect to the fore optic **150**. Either the optical fiber contacts the fore optic or it doesn't. Both arrangements are well known in the art. For example, the fore optic **150** of Liu could be part of a lensed optical fiber. Such an alternative would be obviously expedient in order to optimize coupling efficiency of light into optical fiber. On the other hand, spacing the fore optic from the optical fiber would be desirable in Liu in order to allow easy replacement of a damaged optical fiber. Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 6, 7, 20, and 21 in view of Liu.

*In re* claims 25 and 26, the previous remarks concerning Liu are incorporated herein. Liu further differs from claims 25 and 26 in that Liu does not suggest using a fore optic/window **150** having a thickness of about 300 microns. Changes in size have been held obvious as a matter of law.

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*Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). The device of Liu would appear to work just as well using a fore optic **150** having a diameter or thickness of about 300 microns, especially since Liu does not limit his fore optic to any particular size of thickness. Furthermore, the applicant has not set forth a perceived criticality for using a thickness of 300 microns. Thus, using a fore optic having a thickness of about 300 microns is considered obvious in view of Liu as a matter of design choice. Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 25 and 26 in view of Liu.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (9:00PM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).




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/Omar Rojas/  
Patent Examiner, Art Unit 2874

or  
July 23, 2007



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